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## BUBANI'S FLORA PYRENAEA.

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By EDWARD L. GREENE.

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That great range of European mountains, the Pyrenees, lying partly in France, partly in Spain, and along whose elevated crest runs sinuously the boundary between those two countries, for several centuries has been thought of as almost first among many delectable Old World fields of botanical exploration and research. It would be an interesting list, that of the mere names of the men, ardent botanists, who in the sixteenth century, the seventeenth and the eighteenth, explored each some one small part of this extensive field; but neither time nor space can be given here to the presenting of such a list; nor even to the naming of such as between the years 1781 and 1867 published books or important monographs on Pyrenaean botany. Suffice it to say that between those two dates, Pyrenaean floras were issued from the press—books by different authors—at the rate of more than one for every ten years; and until finally, in the last years of the nineteenth century and the first years of the twentieth, there was published a Pyrenaean Flora in four thick quarto volumes which, as evincing a thorough field knowledge of plants, joined to the profoundest erudition in all that appertains to systematic botany and nomenclature, must rank as second to no other flora of any state or country that has been published within the last hundred years.

Of the man who has produced a masterpiece in any art or science, the life, the training, the education, the means employed, and the method followed are of deep interest. More than that; a knowledge of these is helpful exceedingly to the best interpretation and the fullest appreciation of the work itself.

Pietro Bubani was born not far from Rome in the year 1806. That he was of gentle lineage, and in comfortable circumstances seem vouched for by this, that his childhood and youth were passed in the pursuit of academic study, so that at the age of 19 he was matriculated at the University of Bologna as a candidate for degrees in medicine. At 23 he received the doctorate. But the activities of his mind seem to have been directed not solely to the pursuit of academic and professional studies. Bubani

had been a patriotic youth; had early enrolled himself in, and was conspicuously active for the ends held in view by, a numerous guild of young Italians zealous for the overthrow of several foreign principalities which ruled various and important provinces of Italy 80 years since, and hopeful of a united kingdom under one and an Italian prince; and so prominent and influential had young Bubani been that, exiled from his native province, he removed to Tuscany, where also the restlessness of his political zeal shortened his sojourn. Removing to Lucca, he was banished from that Duchy; and so, in 1835 he left Italy for southern France, remaining for some time at Marseilles, thence passing to Montpellier. We do not know how long before having come to this ancient and celebrated center of botanical activity Bubani had become an enthusiastic student of botany; but at Montpellier it appears that an ardent friendship soon became cemented between the distinguished Professor Dunal and the young Italian, and the elder botanist suggested to the younger that he devote his time and means to the study of the botany of the Pyrenees as a life work. The suggestion was a pleasing one to Bubani, then 29 years old; and the very next season, that of the year 1836, he made his actual entrance upon the great field on the second day of July. The delight with which he pursued that season's work, the first beginnings of his great enterprise, was intimated afterwards in words which, translated, run thus: "How blissfully my days were passed in those high mountains, and with that never flagging enthusiasm I accomplished the summer's task, are not to be described." The ensuing winter was given to the study of his collections, aided by the library and herbaria at Montpellier. In the spring the mountains were returned to; and then, during nine more consecutive summers he continued this field work, passing the winters always in the study of his materials, sometimes with his friend Dunal at Montpellier, but often for weeks and months dwelling at Toulouse, there making use of the great Pyrenean herbarium of Lapeyrouse preserved in the museum of that city.

In 1847 an amnesty had been proclaimed in favor of all political exiles from Italy, and Doctor Bubani returned to the possession of his ancestral estate, carrying with him, as he informs us "Fourteen large boxes of specimens mostly Pyrenaean," also a manuscript, *Flora Pyrenaea*, unfinished, yet well advanced

toward completion, besides many books of notes made from nature alone; all these among the fruits of his eleven years of assiduous travel in and within sight of the mountains.

After three more years of study at home—making an aggregate of fourteen years of almost uninterrupted research on his chosen subject—any man at all covetous of contemporary fame would have finished and published his volumes; yet in 1850 he made another journey to the Pyrenees; and this was reiterated during five more consecutive summers. By this time Bubani was fifty years old. He had now devoted in all seventeen seasons to Pyrenaean field work, giving as many winters, as well as three whole years to the manuscript of his *Flora*. Would he not now add the final touches and give it to the waiting public? He did indeed complete the draft of it; and then, in place of giving it to the printer, he took it with him and went back to the mountains; and this was repeated during five more seasons in succession; his last journey thither, the twentieth, having been made in 1862. On this final expedition the last contributions were made to his great herbarium of Pyrenaean botany, a collection which afterwards found its place of safe keeping in the Royal Institute of Botany of Genoa. But again, having now in 1862 put a period to his long years of field study and observation, eleven years more were consecrated to revision and amendment of the manuscript, which finally, in the year 1873, he could regard as finished. It was not, however, even now his mind to publish it at once; for at the very outset of his undertaking, he had made something like a solemn vow not to let the work go to the press until after he should have devoted forty years to its preparation. In 1875 he had effected yet other corrections and improvements; and he recorded a few more each year thereafter until the 25th of July, 1880. The work had now engaged his energies, mental and physical, during some four years over the forty which he so early resolved to give to it. Why he did not now commit it to the press no one has told us. It does not appear to have been for want of means; but the man was now 74 years of age, and very probably one possessed of the ardent temperament that was this man's, and having worked as he had done incessantly for at least sixty years at high pressure, may find himself old at 74, so as no longer to feel equal to the final difficult and trying task of reading

the proofs of two thousand two hundred pages of most critical matter in small type.

Yet Bubani lived on, and apparently in health, during eight years more, then died suddenly in 1888, at the age of 82 years. He had committed the care of his great manuscript to his daughter, with directions as to its publication.

If it was something like the languor and listlessness of old age which prevented the printing of the volumes in his own lifetime, then extraordinary must have been Bubani's faith in a succeeding generation of botanists, or in some one of his younger contemporaries, to whom the superintendence of the publishing was to be confidently entrusted. Such a thoroughly competent and conscientiously faithful friend was found in Professor Otto Penzig, of the Royal Institute of Botany at Genoa, and only some eight or nine years after Bubani's demise the printing of the *Flora* was begun. Volume I. was issued in 1897; II. in 1900, and both III. and IV. in 1901. The four volumes of this *Flora* aggregate 2174 pages in quarto; and the author's every line is in Latin. It was not, then, designed to be a popular botany of the region. It was meant to be adapted to the wants of botanists almost exclusively, and one may venture to say, to botanists of very high attainment in particular, it may even be for those of future generations, more than for us, his later contemporaries. Some such conclusion as this might have been reached without knowledge of the volumes themselves, and deductively. That a man of uncommon erudition, keen intelligence and unflagging energy had given all the years of earlier and later manhood to the task, and had been willing to cease from life with it still unpublished, would argue that he had all the while felt himself to be laboring in behalf of posterity.

The eighteenth was of all the centuries the one most prolific of botanical books of great worth, and of predestined long usefulness. It was the century that gave the priceless volumes of the De Candolles and the Hookers, of Robert Brown, of Lindley and of Bentham, of Kunth, Endlicher and Engler and Prantl, of Ferdinand Mueller, of Cassini, Boissier and Baillon, Parlatore, Caruel, Saccardo, and, on our side of the Atlantic, of Nuttall, of Torrey and of Asa Gray; and every one of these enjoyed during long years the glory and the praise that were their due. Bubani was the contemporary of them all, lacked but sixteen years of

having lived through the century, accomplished a botanical work as great as the greatest that the century knew, and ended his career comparatively unknown. In this he stands alone among botanical celebrities of that century.

The reader will be wishing to be shown wherein lies the greatness of this merely local flora. We shall answer first, and in a general way, that it is not primarily as a great Botany of the Pyrenees Mountains that Bubani's "*Flora Pyrenaea*" is deeply interesting and instructive. Its greatness lies largely in its originality; the strong points wherein it differs from every other book of descriptive botany that was ever written. What science in all its departments, and in every generation of its progress, hails with the most cordial welcome, is the book that is original; the work, be it large or be it small, wherein the thoughts of an independantly thinking and sane mind find freedom and fulness of expression. Science is always waiting—often long and wearily waiting—for the man and his book who will lift it out of the old ruts.

Bubani has his own views about what constitutes sound and rational botany; his own ideas as to the philosophy of plant affinities, and the arrangement and sequence of families; opinions quite strongly opposed to those now prevailing as to the limit of genera and of species, the descriptions of them and their nomenclature. In all these parts and adjuncts of descriptive botany he has wrought out his scheme so carefully, so laboriously and so fully that it will be to any who study the work no wonder that the half of his time during forty years was occupied with reading, reflecting, arranging and writing out the matter that fills the four thick quartos of his work.

As to description, whether of families, genera or species, he abjures it, save only in case of new or rare species that have not before been adequately described; for the rest, only names and synonyms and the authors of them find expression. To those for whom Bubani writes there is no need of the descriptions. Thousands of the species which he catalogues have been known for many centuries, and have been described in many hundreds of different books. This fact, as he tells us in his Preface, is an all-sufficient reason for his having omitted all description of them; yet of new notes and critical remarks about many of them there is no lack on all his pages. But if formal descriptions

are wanting, the references to other men's descriptions are exceedingly abundant. There is not in existence another phytographic work of equal compass, which, as to the bibliography of species, makes even a near approach to this new Flora of the Pyrenees; and it is a bibliography not alone of phytography. Books that give information about plants are rather more in favor with this author, than books of bare diagnosis. Citations of works of Agricultural, Horticultural, Pomological, Medical and other economic Botany are made most copiously; and the botanist of competent erudition who contemplates those multitudinous paragraphs of bibliography which take the place of description, will reach quickly the conclusion that Bubani in the preparation of his masterpiece read and cited more books of botany than any other man who ever wrote a Flora. In the case of each species that has been long known, his bibliography is a clear index to everything of note that has been written about such species within 3000 years.

Some 21 of the pages of his Preface—large pages and closely printed—are given to the exposition of his views on nomenclature, and the reasons why he maintains them; a learned defense, as it were of the corrections, amendments and improvements in the denomination of families, genera and species with which the volumes abound. It is impossible to produce an abstract of the dissertation; for it is in itself an abstract, so terse and so compact is the whole. Where there is not a word in phrase to be left out without detriment to the forcefulness of statement, selection is hardly possible.

The problems of nomenclature must have confronted Bubani early in his botanical career; and he appears to have met them, and to have solved them for himself; exactly after the manner of a strong mind, acting with firmness, and in complete disregard of the cavillings of his contemporaries. Bubani was 61 years of age, and in the fulness of mental maturity and vigor when what is called the Paris Code was enacted. I am not at the moment prepared to speak of the personnel of that celebrated conclave; but I do not think Bubani, with what must then have been his familiarity with monenclature, was in attendance. I have found in the pages referred to no mention of any codes of nomenclature, save that greatest and best of them all, that of Linnaeus, which our conclaves of recent years have seemed to know little or nothing of. Bubani has very much to say about the *Philosophia Botanica*,

and appears to have brought into requisition all that was said about this Linnaean Code in its day, whether favorable to it, or unfavorable; and all the codes that have been put forth between 1867 and 1910, as far as knowledge of the history of nomenclature is concerned, and the whole rationale of the subject, are dilute and inane in comparison with Bubani's twenty pages. The aforementioned documents are filled mainly with demagogics and dogmatic rulings. The latter is a densely compacted thesaurus of the views of clear thinking and independent minded botanists of the highest rank belonging to several centuries.

As regards the matter of the Flora itself, not much can be said for the instruction of those who have not seen the work, unless we make a few quotations from it.

Opening the First Volume, we find the first page of the Flora proper beginning thus:

**Classis 1.<sup>a</sup> DICOTYLEDONEAE (Theophr., Caesalp.) Ray.**

**Sect. 1.<sup>a</sup> GYMNOSPERMAE Brong.**

**Ordo 1.<sup>o</sup> PINACEAE Lindl.**

**Trib. 1.<sup>a</sup> ABIETINEAE Rich. (L. Cl.) Endl.**

The designations of these major groups one and all indicate more than a little of the author's mind as to system. They tell us that Bubani, like almost all the most noted taxonomists that have been, judge that in a work of systematic botany the beginning should be made from the highest types and proceed to the lower; also that he has no doubt that the most advanced types in the world of plants are trees; and that among trees the conifers rank as the most highly organized. We note next that, whereas most writers of descriptive botany have failed to credit the honors of group authorship except as to varieties, species, and genera, this one thinks that such as have indicated and named the more comprehensive groups should be held in equal honor. More than a hundred years before Linnaeus the opinion was expressed by a greater than he, that the most important distinction that had been made in taxonomy was that which we of to-day know as the dicotyledonous and monocotyledonous groups. Probably no great systematist of the last century would



have disputed that opinion; and Bubani, as we see, with the help of the parenthesis, gives credit to the three botanical authors who had most to do with the founding of these two almost fundamental groups.

The authors whose names are in parenthesis are they who early indicated more or less clearly those distinctions. Theophrastus of Eresus, who wrote immortal chapters of botany more than two centuries before the Christian era, and Andrew Cesalpin who more than seventeen centuries after Theophrastus first called attention to, and emphasized this distinction (1583), also giving the first intimation of its taxonomic importance. Then outside the parenthesis, therefore in really immediate juxtaposition to the group name itself, the name of Ray is placed, because he was first—and that just 99 years after Cesalpin—to name these two Grand Divisions of the Phanerogams, the Dicotyledones and the Monocotyledones, and also actually to distribute the seed plants according to these distinctions. If, in the natural classification of plants the difficult and great thing is the laying of foundations and the indicating of primary and fundamental groups—something which it would be temerarious to call in question—then, what name is there in the long list of British botanists of worth greater than that of John Ray? To one who rejoices in botanical consistency, truthfulness and fair dealing, it is a delight to read, though by the mere accident of bibliographic citation, at the top of the first pages of a recent botanical masterpiece, the name of Ray.

It will be seen by the second line of the same page that the first group subordinate to the Dicotyledones, that of the Gymnospermae, is credited to Brongniart; also that there are no parenthetical authors placed before that one; this seeming to signify that the illustrious French Botanist, Bubani's contemporary, had both indicated and named the group. Here, however, one would have expected to see the name of Theophrastus again at least in parenthesis, for whoever reads the chapters of the old Greek founder as carefully as Bubani appears to have done would not be likely to overlook his having made and used the terms gymnosperm and angiosperm, and that was more than 2000 years before Brongniart. Perhaps Bubani's reason for the omission may have been that the Theophrastan use of the terms and

the Brongniartian and modern use are too far from being equivalents when viewed taxonomically.

Passing now to the third line of the page as given above, one may well be surprised that this man of more than a half-century ago, the contemporary of Hooker, Bentham, Endlicher, Parlatroe and Asa Gray declines to adopt the old and familiar ordinal name *Coniferae*, and substitutes the much later, indeed the comparatively recent name *Pinaceae*. Confronted here at the outset by this "aceae" ordinal name in place of the old one, *Coniferae*, the thoughtful reader will turn a few pages enquiringly to see whether Bubani in his old age was captivated by the very new fancy that these designations of orders—families, as we now say—are to be taken up not according to priority, but in deference to their ending with *ACEAE*. The enquirer will not turn many pages before ascertaining that the venerable author of this *Flora* had no such thought. With him, family names may terminate in almost any sort of a way, as if in complete indifference to the new fancy about uniformity; and these, like all other names of groups high or low, mostly stand or fall with him according to priority. But why, then, *Pinaceae* instead of *Coniferae*? I do not know; but my guess would be that fault is found with the term *Coniferae* as inapplicable because untruthful. In the order, as received by Bubani—and indeed by all authors—only a very insignificant proportion of the trees bear fruits approaching the cone-shaped. The firs bear cylinders, the spruces bear ovals as do the larches and many more. Cypressess have spherical fruits, while those of junipers are spherical and berry-like, and a number of genera yield fleshy one-seeded fruits as far from the cone-like as plums or olives are. Only certain pines, and by no means all of them, bear fruits more or less cone-like, while not one of them is veritably a cone in shape. Bubani we shall find to represent that school of nomenclators—in the long run, the strongly predominant school—who hold that in science no falsity must be tolerated, even in a name. This, I say, is my surmise as to his reason for abandoning the use of the familiar designation *Coniferae*, which also is much older than we should have believed; for Bubani in his bibliography of the Order as such finds the term *Coniferae* to have been used by his countryman Bellonius who, in the year 1533, in a treatise on these trees calls them by that group name.

The genus *Pinus*, as Bubani sets it forth, perfectly illustrates his views in general as to the comprehensiveness of a genus; and it contains *Abies*, *Picea*, *Cedrus* and *Larix* as well as the true pines. The genus was so received by most botanists after Linnaeus for a hundred years and more; but the genus is by name credited to Pliny; not that it had not been recognized as a genus, and its species much written about by Greek authors, and under the Greek generic name, long before Pliny's time; but Bubani stands evidently by the principle—it is only simply common sense,—that in Latin botany Greek generic names do not displace Latin names, however much more ancient.

This first page of the Flora furnishes us with one example of the authors methods in dealing with species; and it is so original, and so perfect an example of his way of presenting all species, that the reader of these comments will need to see, at least the most indicative and important first line, and here it is:

**Pinus Abies** (Homer, Theophr., Virg., Plin.) Du Roi *Obs. Bot.* 39.

And now, first of all, a word of explanation is called for in relation to Bubani's parentheses. One who knows how, recently parenthetical author's names have come into frequent use in systematic botany may well be surprised that this man, belonging as he does to an older generation of men who scorned the use of them, should have employed them at all; but he makes much more use of them than any other author ever has done. But his parenthesis is not at all that of other people. It is peculiarly his own, and has its own purposes. While in recent books in which parenthesis appears freely, it has to do with nomenclature and nothing else, Bubani's parentheses, on the contrary, have nothing to do with it. The uninstructed, on reading the line would be apt to say that this author credits the name *Pinus Abies* partly at least to Homer, Theophrastus, Virgil and Pliny, which would be utterly wide of the truth. Neither Homer nor Theophrastus ever heard of the name *Pinus* even, or of the word *Abies*; and neither Virgil nor Pliny ever dreamed of a name *Pinus Abies*, though both those men were as familiar with binary plant names and tree names as we are. Bubani's meaning is simply that those authors whose names are printed parenthetically are they who wrote in their day important matter in relation to this kind of

tree. As for the name, that is creditable absolutely to Du Roi.

Next after the name *Pinus Abies* comes a closely compacted paragraph of 40 bibliographic citations; this subserving a double purpose, that of a description of the species—which description the student may find in the works cited—and that of the synonymy of the species.

Of synonyms for this one he cites 10 binary names, beginning with *Pinus Picea* of Linnaeus, which can not be received as the name for the reason that the tree is not what Linnaeus supposed it to be, namely the *Picea* of the ancients.

As to citation of authors, this part of the paragraph begins with the completing of those given only partially and suggestively within the parenthesis above. The reader is now furnished with the exact places in Homer, in Theophrastus, in Virgil and in Pliny, where this species is written about by those authors of the distant past; and the 40 authors cited include selections of them from almost all the centuries from before the Christian era, down to a point far past the middle of the nineteenth. And a particularly admirable feature of this copious bibliography is that the works cited are not alone treatises on strictly systematic and descriptive botany. References to authors on agriculture, pomological and especially medical botany are numerous, not to mention citations of poets who have sung the qualities and uses, and even the folk lore of old and long known trees and shrubs and herbs; so that economic botanists of whatever specialty, may find these wonderful bibliographies of Bubani's quartos a treasury of references to almost the whole earlier literature of applied botany; a treasury, too, such as does not elsewhere exist.

Our understanding of Bubani's mind may be in no better way helped than by following through the very next page of his discussion of *Pinus*, the second Pyrenean species being captioned thus:

**Pinus Pinea** (Homer, Arist., Theocr., Virg., Theophr., Diosc.; L. Sp.

Need one repeat, that here also the parenthetic names of authors have not any bearing upon the nomenclature of this pine? They are but preliminary hints of ancient classic writing about the tree. Only in the case of a passage in Theophrastus

is Bubani in doubt as to that author's having had just this species in view. He thinks that uncertain; and the name as a name is credited to Linnaeus alone. The bibliographic paragraph following the name numbers 37 definite references—references by volume, page, and often of figured illustration—to almost as many different authors early and late. In the midst of this bibliography are quoted four binary names for this pine, all of them about two hundred years older than Linnaeus' *Pinus Pinea*; yet is Bubani the ablest kind of a champion of the principle of priority without reference to, or predilection for, Linnaeus and the year 1753. He is one of a long list of botanists who have brought to the front many pre-Linnaean binary names, reducing the Linnaean equivalents of them to synonymy. How is it that he has done otherwise in this instance? He has not explained the case, and again we must make a guess; but it is needful that we present those four sixteenth-century names which are written down as synonyms. They are *P. domestica*, Mattioli (1565), *P. sativa*, Anguillara (1561), *P. vulgatissima*, Lobel (1570), *P. Italica*, Camerarius (1588). The first two are equally indicative of a cultivated thing, and from such a point of view as Bubani would take, are unsuited to be the name of a wild tree, or a wild type, as one may say. The third is bad for the same reason, conveying the idea, true enough as a fact, that the tree is widely disseminated under cultivation; though in a state of nature, that is, in that condition which every systematist must regard as the typical one, *Pinus Pinea* is of a much restricted habitat, being only maritime along certain Mediterranean shores. As for the last of the four, many authors anterior to Bubani were averse to geographic plant names as apt to be false or misleading; and this pine is not more fitly donominated *Italica* than it would have been had it been called *Hispanica* or *Gallica*.

Bubani's third species of pine illustrates another mode of expression. The line meaning the species is simply

***Pinus Pyrenaea*, La Peyrouse!**

This is a rather recently discovered species; at least, it was unknown to earlier botanists; hence no call for the usual parenthetic citations; yet the bibliographic paragraph is extensive, and the list of synonyms is large, for, according to Bubani's judgment two or three segregates from it that have been proposed

are forms rather than species; moreover, the author knows that the name he adopts has not priority, and says that they who prefer to do so may use the name *P. Salzmanni* which, as he shows, is six years older. Equally characteristic of the author is his amendment of the name imposed by La Peyrouse, who had it *Pyrenaica* rather than *Pyrenaea*; and he defends himself in this course by a terse and vigorous Latin paragraph which in English would run thus:

"The word *Pyrenaicum*, of bad latinity, I have altered to *Pyrenaeum*, following Caius Julius Caesar, and also Pliny, and in sheer contempt of the folly of those who not only will not improve a piece of bad Latin diction, but refuse to tolerate any kind of correction in a name."

A few pages beyond the pines occurs another change as to a familiar specific adjective, the author's reason for which is stated as definitely. The case is that of the type species of the ancient genus *Taxus*; which genus, having been known for ages as a monotype, needed no specific name, and had none until Linnaeus called it *Taxus baccata*. Bubani's line introductory to the discussion of the new tree reads thus:

**Taxus baccifera** (Theophr., Diosc., Virg., C. J. Caesar, Nicand., Galen, etc).

Since the authors parenthetically named have nothing to do with this matter of nomenclature, they who adopt the new binary name will write it simply *Taxus baccifera*, Bubani. But why this amendment of the Linnaean name? He gives answer that it represents an altogether mistaken use of the adjective *baccata*. A *baccate* thing is a thing made of berries, as for example the strings of bead-like red berries with which women belonging to races not yet civilized have been wont to adorn themselves; and the woman thus adorned was a *baccata*, yet the tree or plant yielding berries is as invariably a *baccifera*.

I should like to carry Bubani's argument a little further, by noting that Linnaeus seems to have hit upon the right adjective when he named a certain shrub *Myrica cerifera*, and that had he made it *Myrica cerata*, he would still have been employing a good Latin adjective—the exact parallel to his *Taxus baccata*—but would have made an absurd use of it; for the Latins would

never have applied the term *cerata* but to a thing made of wax, as for example a wax plaster.

According to Bubani's way of thinking, botanical Latin ought to be Latin, anyhow, and the beautiful science not be made, through its nomenclature, a common dumping ground for all sorts of rubbish of impossible and intolerable Latinity. There have been, there are, and there will always be men of his opinion, though these are not likely soon to become multitudinous; and to the multitude of to-day, at least in this country, Latin names of plants are mostly terms of a set of meaningless cabalistics, and their use in books of vernacular botany a mere pedantry. It is even taught in some of the so-called codes, that the best policy is that of ceasing to think of names as having meaning at all.

But the name *Taxus baccifera* may not satisfy every one who may see the desirability of substituting something in place of the erroneous term *baccata*; for almost a century before Bubani, Salisbury had dispossessed the species of that mistaken adjective, and had named the tree *Taxus lugubris*, of which action Bubani was well aware, for he mentions the name in his synonymy. Perhaps his mind may have been that the name given by Linnaeus should but be corrected, and, as corrected, be retained in preference to one of later date that is of wholly different meaning.

The citation of Julius Caesar on *Taxus* has impelled me to consult the passage (Comm. Book VI., Ch. 31), where it is recorded that at the beginning of winter Catavolcus, the aged king of a Belgian tribe, burdened with years, and feeling himself unequal to the hardships of a winter campaign, "*taxo se exanimavit*," that is, poisoned himself to death with yew. Whether modern toxicologists know anything experimentally of this poison or not, I know not. The deadly principle does not reside in the fruits; for these have been eaten without harm in recent times, as they also were anciently.

Let us present a few more illustrations of our author's ways of expressing himself as to genera that have been long recognized; and *Quercus* may well come next, as a genus that has been written about ever since the beginnings of history. Without any parenthesis, he credits the genus to "Virgil, Plin., L." by which I suppose he means to show that *Quercus* has been the name the genus has borne with all botanists using Latin, the earliest as well as the

latest. The first species of the genus, as to its name, stands thus:

**Quercus vulgaris** (Bibl. Sacr.), Lobel, Ger[arde].

Now while the untaught and superficial among botanical readers of our time might say: Here are the Sacred Scriptures cited for the name *Quercus vulgaris*, the expression would be wide of the truth; for in respect to species as well as genera Bubani likes to give an outline of its whole history in literature, and in the fuller bibliography next the name he refers to Genesis, Ch. 35, v. 8; then to Isaiah, Ch. 6, v. 13, not neglecting to give *Allon* as the Hebrew name of the tree. The binary Latin name he attributes to Lobel (1570), of course writing the Linnaean name, *Q. Robur*, as one of the synonyms, along with *Q. pedunculata*, Ehrh. etc.

In the case of the oak next after *Q. vulgaris*, namely that commonly known as *Q. sessiliflora*, he has the following appellation:

**Quercus latifolia** Plinii! Nat. h. 1. 16. C. 6. vol. 8.

In the further bibliography some six or seven names for the species, all of them of the eighteenth century or the nineteenth; all are synonyms with Bubani because he respects the law of priority; and also as knowing that with Pliny in the first century binary names for trees and plants were in as familiar use as they were with Linnaeus in the eighteenth.

Out of the 9 species of oak inhabiting the Pyrenees, 3 retain their Linnaean names as by right of priority, and I subjoin Bubani's own peculiar citations of three:

**Quercus Suber** (Theopter., Plin., Plutarch) L. Sp.

**Quercus Ilex** (Bibl. Sacr., Homer, Theocr. Theophr., etc)  
L. Sp.

**Quercus coccifera** (Bibl. Sacr., Theophr., Diosc., Plin.)  
L. Sp.

To have presented the names of genera all according to the law of priority for so comprehensive a flora as that of the Pyrenees was a very large enterprise; and the manner in which Bubani acquitted himself of that part of his task renders it easy to under-



stand how this study of generic nomenclature alone may have cost him at least the half of his forty winters of bibliographic work.

Some notion will now be given of what it means to take up generic names always by the rule of priority; and for this purpose we shall not need to turn many more of the Bubanian pages. Thus far our comments have been confined to selections from the first 70 only of our author's 2200 pages; and our instances of unfamiliar generic names may as well begin with one occurring on page 85 of the same Volume I. The name is **Stellina** displacing the *Callitriche* of Linnaeus, which was a name used by Pliny, with what plant in view is uncertain; Bubani thinks it was *Trichomanes*, and is certain it was not *Callitriche* of recent botany. The type was first described by Lobelius, who named it *Stellaria aquatica*. There were other types, several of them, named *Stellaria*, both before Lobelius and after his time; and so Bubani, constrained to propose a tenable name for the genus, tries to come as near as he can to the original *Stellaria*, Lobel.

Pages 90 to 116 of the volume are occupied with an elaborate treatment of 37 species of Pyrenaean euphorbias, all under the name of **Tithymalus**, of course, as having been the designation of these plants during two or three thousand years before Linnaeus, and which also is finding its place in other books that are more recent than even Bubani.

The 15 species of the docks and sorrels are of the classic name **Lapathum** rather *Rumex*, although both names, at least as to Latin nomenclature, are of equal antiquity, yet as a Greek generic name *Lapathon* is older. To the sorrels, however, received as the really natural genus which they seem to be, the name *Rumex* belongs. It was these which the Latins called *Rumex*. For the docks *Lapathum* was the accepted name by all botanists before Linnaeus, as it has been by many authors since his day; among the many Haller, Adanson, Scopoli, Lamarck, Moench, and S. F. Gray.

The Amarantaceae are represented in the Pyrenaean flora by two genera, by name in the Linnaean onomatology *Polyne-mum* and *Amarantus*, both of which are suppressed, and an entirely new name for each is proposed; for *Polyne-mum*, **Rovillea** is substituted, for *Amarantus*, **Galliaria**. He knows little about the vicissitudes of generic nomenclature in times past who is

unaware that by clearest right of priority *Amarantus* belongs to the plants now called *Celosia*. In that unbridled license of transposing generic names wherein Linnaeus loved to indulge, the real amaranths, the cockscombs as we call them in English, were bereft of their long established name, and it was transferred to the then perhaps nameless genus of homely weeds and *Celosia* was invented to take its place as a then new designation for the cockscomb.

The new name **Galliardia** for the tumbleweed type and its congeners, being founded on a personal name, is a good example of Bubani's fine predilection for commemorating in this way deserving men of science whose names were well on the way to oblivion for the reason that they did not write and publish books. He tells us (Vol. I., p. 185) that Bernardino Galliard who lived in the eighteenth century, and was best known as an artist and a successful restorer of the art of scenic painting, was also the first of Italian private gentlemen to establish on his own estates a splendid botanic garden; who undertook many a journey for the procuring of rare plants for his gardens, was a great lover of botany and friend of botanists; to whose botanical zeal upper Italy was indebted for the introduction of many plants before unknown there.

There is a question of nomenclature which I, in thought only, thus far, and not in word, have entertained somewhat seriously, and that is, whether or not the name of a genus is to stand or fall according to whether or not it was made to cover, in the first instance, the typical species of the genus? The naming of the Linnaean *Amarantus* anew, by Bubani, is a case in point. Out of that, and quite before Bubani's time, *Euxolus* and *Albirsia* had been segregated and named as genera. The question is this: on the subsiding of *Amarantus*, by its restoration to that genus to which by right of priority it belongs, should either *Albersia* or *Euxolus* be taken up for the genus as a whole? Bubani, in practice, always answers this question negatively; so that, with him, the original or typical species, under such condition must be named anew generically, and the names of earlier segregates be left as synonyms so long as generic rank is not allowed them, and the genus in its comprehensiveness be maintained.

These comments must not be prolonged, though as to the whole work we have made mention of only here and there a paragraph; and even these from only the first volume of the four; and the

notes on these will be read mostly by botanists who never saw the work; perhaps never before heard the name of it.

I have said before that science hails with something like joy the book of science that is original, and in which an independently thoughtful mind has expressed itself without hesitation; but I have not said that *men* of science welcome always such books; and I am far from being alone in the observation that men of science may themselves be the most effectual hindrance to the advancement of science. Botanists in multitudes, and in every century, have their pet theories and their idol principles, their faith in which is implicit and firm, and to which they seem to have sworn such eternal allegiance that, when the new man comes along, the strong and fearless iconoclast, and laughs to scorn their idolatry, he must simply be ignored. It must not be noised abroad that he is here. Thus has it become notorious in the history of our science that the books that were most surely destined to accomplish great things for its advancement, in the day of their publication fell from the press as still born, and remained unnoticed for the space of a generation or two, or three. Such were the immortal treatises of Cesalpinus, of Adanson, of Lamarck, and of Salisbury besides those of many a man of lesser note than they.

It is of good augury, this fact that so great a work as Bubani's *Flora Pyrenaea*, though ten years published, is still almost unknown. It may have been reviewed in several journals of botany published in Latin Europe which I have not seen; but that I doubt; and I have looked in vain these last ten years in British and American journals for a word of mention of this treatise. Also I am confident that this silence is not everywhere that of ignorance as to the very existence of such a *Flora*. I know of several American botanists who have put themselves in possession of this work; and not one of these several ever heard of the treatise except through me; and I probably should not have known of its existence had not the publishers of it in Italy sent me their printed circular announcing it.

This silence, I repeat it, seems to me ominous; for no botanist competent to read Bubani, can peer into any one of the volumes at any page, and fail to see that it is a work of most extraordinary quality in other respects besides its amazing erudition. But botanical nomenclature is therein treated as if there had not been in the

nineteenth century a congress or a conclave or a code; and this silence of Bubani is the silence, not of foreboding, but of contempt. The work of his lifetime is a very notable monument; and it will not fall. The time will come, how soon or how late none may know, when the demand for Bubani's *Pyrenaea* will equal if not exceed the supply.

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## OUR BIRDS IN MARCH AND APRIL.

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By BROTHER ALPHONSUS, C. S. C.

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The remarkably warm weather, from March 16 until April 22, 1910, brought an unusually large number of migrants in March. The total number seen during this month last year was only seven. It is doubtful that such a large record of migrants will soon be made again.

Among the rare migrants seen by the writer this year was the Prairie Horned Lark. A pair of these birds was found feeding on low ground that is used as a garden. The birds were tame, and sometimes alighted in trees. Their note is a low whistle.

Another species, seen but once by the writer during his observations covering a number of years, was the Tufted Titmouse. As soon as he heard its loud, whistling note, he recognized it as one that he did not know.

The Purple Finch was not seen in March or April this year. The writer can not account for the absence of this species. The bird is conspicuous for its song in spring, and would surely have been heard if it were here.

### MARCH.

Birds seen every day except on the dates after their names:

Blue Jay, 13, 19.

Snowbird, 1, 2, 4, 6.

Robin, 1, 2, 3, 6, 11, 13, 14.

Purple Grackle, 1 to 5, 13.

Crow, 28, 29.

Bluebird, 1, 2, 6.

Song Sparrow, 1 to 4.

Meadowlark, 1 to 5, 7, 13.